

What is claimed is:

Sub 1.

1. A pre-fabricated wall panel, comprising:

a first, exterior facing sheet of generally rigid material and having a first thickness and a first sheet perimeter;

a second, interior facing sheet of generally rigid material and having a second thickness and a second sheet perimeter, said second sheet being generally parallel to said first sheet and spaced therefrom a strut thickness;

at least two framing struts being located between said first sheet and said second sheet and having said strut thickness to define a panel volume between said first sheet, said second sheet, and said framing struts;

a polymeric in-situ foam core located in and substantially filling said panel volume; and, an overall panel thickness including the sum of said first thickness, said second thickness and said strut thickness, said overall panel thickness being four inches, plus/minus 1/4 inch.

2. The pre-fabricated wall panel of claim 1 and further comprising at least one electrical box located between said first sheet and said second sheet and at least one conduit for electrical wires running between said electrical box and said first sheet perimeter, and wherein said in-situ foam at least partially surrounds said electrical box and said conduit.

3. The pre-fabricated wall panel of claim 2 and further comprising a window opening correspondingly cut in said first sheet and said second sheet, and wherein said window opening is partially defined by strut members around a perimeter thereof.

4. The pre-fabricated wall panel of claim 3 and further comprising a window mounted in said window opening, said window having window jambs having a thickness of 4 9/16 inches and being mounted in substantially flush alignment with said overall panel thickness.

5. The pre-fabricated wall panel of claim 4 wherein said wall panel has a thermal insulation R-value through a foam containing portion of said thickness of at least 20.

6. The pre-fabricated wall panel of claim 5 wherein the panel has a first vertical side edge having a male projection member adapted to project into a corresponding female reception member on an adjacent panel.

7. The pre-fabricated wall panel of claim 6 wherein said first side panel and said second side panel are made from wood-based material.

8. The pre-fabricated wall panel of claim 7 wherein said in-situ foam is a rigid foam cured in-situ substantially comprising polyurethane.

9. The pre-fabricated wall panel of claim 8 wherein said struts comprise wooden struts having an actual cross-sectional dimensioning of about 1½ inches by 3 3/16 inches.

10. The pre-fabricated wall panel of claim 9 having a ½ inch thick sheet of drywall secured adjacent said second panel, said drywall having an interior surface that is flush with a jamb member interior edge.

11. The pre-fabricated wall panel of claim 1 and further comprising a window opening correspondingly cut in said first sheet and said second sheet, and wherein said window opening is partially defined by strut members around a perimeter thereof.

12. The pre-fabricated wall panel of claim 11 and further comprising a window mounted in said window opening, said window having window jambs having a thickness of 4 9/16 inches and being mounted in substantially flush alignment with said overall panel thickness.

13. The pre-fabricated wall panel of claim 1 wherein said wall panel has a thermal insulation R-value through a foam containing portion of said thickness of at least 20.

14. The pre-fabricated wall panel of claim 1 wherein the panel has a first vertical side edge having a male projection member adapted to project into a corresponding female reception member on an adjacent panel.

15. The pre-fabricated wall panel of claim 1 wherein said first side panel and said second side panel are made from wood-based material.

16. The pre-fabricated wall panel of claim 1 wherein said in-situ foam is a rigid foam cured in-situ substantially comprising polyurethane.

17. The pre-fabricated wall panel of claim 1 wherein said struts comprise wooden struts having an actual cross-sectional dimensioning of about 1½ inches by 3 3/16 inches.

18. The pre-fabricated wall panel of claim 1 having a ½ inch thick sheet of drywall secured adjacent said second panel, said drywall having an interior surface that is flush with a jamb member interior edge.

Sub 21 19. A building assembly, comprising:

at least two pre-fabricated wall panels connected to each other, each of said wall panels including

a first, exterior facing sheet of generally rigid material and having a first thickness and a first sheet perimeter;

a second, interior facing sheet of generally rigid material and having a second thickness and a second sheet perimeter, said second sheet being generally parallel to said first sheet and spaced therefrom a strut thickness;

at least two framing struts being located between said first sheet and said second sheet and having said strut thickness to define a panel volume between said first sheet, said second sheet, and said framing struts;

cont. as
a polymeric in-situ foam core located in and substantially filling said panel volume; and,
an overall panel thickness including the sum of said first thickness, said second thickness
and said strut thickness, said overall panel thickness being four inches, plus/minus ¼ inch;
a jamb member secured adjacent at least one of said struts; and,
sheets of drywall secured adjacent said second panels, said drywall having an interior
surface that is flush with a jamb member interior edge.

20. The building assembly of claim 19 wherein said jamb has a thickness of 4 9/16 inches and said drywall has a thickness of ½ inch.

21. The building assembly of claim 20 wherein one of said panels has a first vertical side edge having a male projection member adapted to project into a corresponding female reception member on an adjacent panel.

22. The building assembly of claim 21 wherein said male projection comprises two members lap jointed along an inside surface of corresponding first and second facing sheets, and wherein polymeric in-situ foam is located between said two lap jointed members.

23. The building assembly of claim 21 wherein said wall panels have a thermal insulation R-value through a foam containing portion of said thickness of at least 20; wherein said struts comprise wooden struts having an actual cross-sectional dimensioning of about 1½ inches by 3 3/16 inches; and, wherein said first sheet and said second sheet are each made from 7/16 inch thick OSB.

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